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Description DE19503993

The invention relates to the use of a product for external supply of food ingredients or drug substances for improvement of glucose intolerance, insulin resistance or hyperlipidemia in obesity, metabolic syndrome and diabetes mellitus and gastro-intestinal disorders or skin disorders such as psoriasis, or for the prevention of such diseases.

Insulin resistance is a metabolic disorder that leads to hyperlipidemia, metabolic obesity, glucose intolerance and non-insulin-dependent diabetes. Often occurs in addition to hypertension and dyslipidemia. Weight reduction, exercise and medication can reduce insulin resistance.

The following describes the use of fish oil and medium-chain triglycerides (MCT) for dietary or nutraceutical purposes, measures as described, such as the aim of improvement of insulin resistance, glucose tolerance, dyslipidemia and hypertension. A reduction in glucose increases in the next glucose tolerance test and after a mixed meal, and lower fasting and postprandial insulin concentrations achieved. It was thought of a prevention of these diseases.

The main prerequisite for the application of these substances is an administration in larger quantities which implies due to the unpleasant taste and sensory masking because of the potential gastrointestinal intolerance symptoms, moreover, often for a micro-encapsulation in controlled release formulations.

The precise use of this product are indicated in the claims.

According to the invention it thus used a product for external supply of food ingredients or medicinal ingredients, in which case known as omega-3 fatty acid at least one of the food ingredients or drug substances, an omega-3 fatty acid or omega-3 fatty acid containing substances with a content of at least 50%, and another food ingredient or a pharmaceutical ingredient, medium-chain triglycerides (MCT) with a grade of at least 90%, of the identified substances, a quantity of substance administered per 10-50 g / kg body weight once daily, with the aim of improvement of insulin resistance, the diseases from which arises. However, glucose intolerance, dyslipidemia and hypertension is reduction increase in glucose in oral glucose tolerance test and to achieve after a mixed meal, and low fasting and postprandial insulin concentrations, to facilitate a normalization of body weight in these diseases in preventive intent.

From the Patent 114 (a) (a) which is not yet published, a product for external supply of food ingredients is known to be present in the market food ingredients, with at least one of the food ingredients a fatty acid or fatty acid containing substance with a purity of at least 50%, the plasticized in a starch matrix is previously dispersed, at least a portion of the fatty acid (s) is at least partially enclosed in an amorphous state. It has been shown that these products can also mask the high concentrations of food ingredients, when when taken in higher doses or for long periods, intolerance (phenomena) or simply cause discomfort among the only people to whom the materials are to be administered can.

Therefore, is preferably used for the preventive use of ingredients produced in which the fatty acid (s) in a plasticized starch matrix are had finely dispersed, at least a portion of the fatty acid (s) is at least partially enclosed in an amorphous state.

A further improvement of acceptance, tolerance and desired Resorptionseigenschaften achieved by a coating, a cover or mask and / or encapsulation of the product.

However, it is also possible to apply the MCT oils on an amorphous powder, without requiring any further encapsulation or additional protection to be provided against oxidation.

For the purpose of masking and / or encapsulation, stress products such as maltodextrin, cyclodextrin, dextrin, beta-cyclodextrin, native or modified starches.

It can be used for the preparation emulsions or dispersions, for example, nanoemulsions, can continue to phospholipids or liposomes are used.

The procedures for carrying out the encapsulation include encapsulation and phase separation processes, spray drying method, coating method in a fluidized bed or extrusion process.

The product obtained by encapsulation, storage, and held the encapsulation necessary for the inventive use properties.

The product can be partly or wholly at least modified by Amylosecomplexierung with fatty acids and that it more resistant to the intestinal absorption, or retardant or partially.

Be advantageous for the product, the omega-3 fatty acids, MCT fats and glucose modified by complexation with inulin or partially used and thus be resistant to strength together.

The product used in the fatty acid or fatty acid-containing substance should be fish oil with omega-3 fatty acids or fish oil concentrate with an increased proportion of omega-3 fatty acids.

Particularly advantageously, high oil and / or highly refined omega-3 fish oil and / or omega-3 fish oil concentrates can be used with a total amount of omega-3 fatty acids of more than 65%.

It should be used in high arachidonic acid (EPA) concentrations at a level of more than 20% and / or Docosahexaenoic acid (DHA) concentration, with a share of more than 20%, preferably as EPA or DHA fatty acid concentration.

Also preferred is a use of fatty acids as triglycerides in Acylketone or DHA and / or EPA fatty acids.

Also, the product should contain the inventive use of medium chain fatty acids.

The invention uses not provide that the n-3 fatty acids or medium chain fatty acids containing products be produced in each case independently and administred, they can also be a mixture of products administered and/or administered.

Various additives to the product used according to the invention are possible, such as flavorings, coloring, fat-soluble substances, such as fat-soluble vitamins, antioxidant substance, etc., pharmacologically active substances and many more.

Essential to the invention is that the ingredients present predominantly or exclusively against a possible realization of food or food ingredients or used as a dietary supplement or food additive to be.

Other additives may be incorporated into the product to the inventive use, so that the rules on the content of protein, fat, carbohydrates, vitamins and minerals after 14 dietary MCO on dietary products for use as a meal or in place of a meal equivalent for overweight. Also, the product can be designed so that it complies with the provisions of the dietary food diet mentioned in 14 MCO.

Thus, the used product may be used along with an additional use or under another than mixed use.

Basically, it is also possible that the product used in the invention is a medicine by its composition and also for the purpose, which may be used only under medical supervision, in particular, when thinking of nutritional medical measures outside regulation of the diet under medical supervision.

When used according to the present invention are used as treatment targets a reduction in insulin requirements in a patient of insulin dependence, normalization of blood glucose and protein he are in insulin-dependent diabetes mellitus type 1 or diabetic secondary failure, without treatment goals are reducing and smoothing of blood glucose in secondary failure in diabetic or insulin-dependent diabetes mellitus type 2, normalizing and normalization of blood sugar in non-insulin-dependent diabetes mellitus type 1 or type 2.

In dietary cases, a reduction or elimination of the use of oral hypoglycemic agents, such as are of the sulfonylurea or biguanide type type achieved.

It is also intended as a treatment goal of a reduction in insulin resistance, the impaired glucose tolerance, the increased blood sugar rate of ketohyperketonemia and normalization of blood sugar with metabolic syndrome or obesity.

It is already mentioned that a reduction in insulin resistance can be treated, which is caused by other causes or conditions, it arise by the method of production using starch-matrix together with fatty acids or fatty acid-containing substances in any case, the insulin response and/or blood sugar levels after Ketohyperketonemia lowered, thereby reducing the glycemic index of the product.

Acceptance, tolerance and desired effects/preventive effects to be achieved by an advantageous form of the product, for example, pellets with a diameter of 0.1 to 2 mm.

The product can be mixed with a liquid to a paste, a suspension, a dispersion or the like, or be administered as a beverage, such as a shake drink, or a soup or sauce.

The above in the description, the drawings and the other disclosed features of the invention form individually and in any combination for the realization of the invention to be substantial.